Abstract Submitted to the
International Conference on Strongly Correlated Electron Systems
University of Michigan, Ann Arbor
August 6-10, 2001

Magnetic Properties of $CeNi_2Ge_2$

C.D.Frost[1], B.D.Rainford[2], F.V.Carter[3], S.S.Saxena[3]

[1] *ISIS Facility, Rutherford Appleton Laboratory, OX11OQX,UK*
[2] *Dept. of Physics, University of Southampton, SO171BJ, UK*
[3] *Cavendish Laboratory, Cambridge University, CB30HE, UK*

The magnetic susceptibility of the non-Fermi liquid heavy fermion compound $CeNi_2Ge_2$ is highly anisotropic. The c-axis susceptibility has a broad maximum near 30K, which has previously been ascribed to short range AF correlations; at low temperatures there is a weak upturn in χ_c(T), while the easy axis switches from [001] to [100]. We have carried out a polarised neutron study of the induced moment in a field of 4.6T which shows that the upturn in χ_c(T) is intrinsic. Inelastic neutron scattering revealed two components to the magnetic response, a broad crystal field excitation, centred on 25 meV, and a quasi-elastic component. Using these data we present an analysis of the single crystal susceptibility, based on a crystal field model, that describes all the main features, including the maximum in χ_c(T) and the change in sign of the anisotropy with temperature. This model may give further insight into the origins of non-Fermi liquid behaviour in this compound.